

REMARKS

Claims 1-5, 7-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Lee et al. (US Patent Application Publication No. 2001/0052956). The applicant believes that the Examiner's statements are not accurate and need further clarification.

The Examiner's arguments are analyzed based on MPEP guidelines which are stated in the MPEP Paragraph 2131 as follows:

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. V. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987), MPEP 2131. Further, "the identical invention must be shown in as complete details as is contained in the . . . claim", *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989)."

The independent claim 1 of the patent application discloses a preformed diffractive grating structure arranged on an electrically (i.e., by applying an electric field) deformable viscoelastic layer, said layer having a free surface. However, Lee et al. do not disclose a preformed diffractive grating structure arranged on an electrically deformable viscoelastic layer or any electrically deformable layer.

The last paragraph of claim 1 clearly states that the optical device comprises: "control means for applying control voltage between the first and second electrode structures to generate an electric field passing through an interface between the viscoelastic layer and the dielectric

gap in order to electrically deform the surface relief of the viscoelastic layer."

Lee et al. do not disclose the feature recited in claim 1 above to be able to electrically deform the surface relief of the viscoelastic (or equivalent) layer, which is alleged by the Examiner. The electric field applied by Lee et al. serves a different purpose, i.e. improving a viewing angle of the LCD display which is achieved by an appropriate alignment of the liquid crystal molecules (e.g., see Figures 10-12 and paragraphs 0052-0056 of Lee et al.), and this electric field does not deform any surface relief layer.

Moreover, the disclosed embodiments of Lee et al. are based on surface relief gratings, which are obtained using an optically curable resin, e.g., NOA60 by Norland Products Inc. (see paragraph 0038 of Lee et al.). The resin is then cured by ultraviolet UV radiation (see paragraphs 0039-0040 of Lee et al.). The height of the grating structure is determined according to the UV-energy used in the production phase (see paragraph 0044, and Fig. 8 of Lee et al.). The height of the resin structure is not electrically adjustable after curing as obvious to a person skilled in the art.

A "vertical aligning film" is applied onto the grating (see paragraph 0045 of Lee et al.) but the form of the thin vertical aligning film is determined by the permanent form of the grating underneath (see Fig. 10a of Lee et al.), and not adjustable by applying an electric field to the structure as obvious to a person skilled in the art.

The orientation of the liquid crystal molecules may be electrically controlled (e.g., see paragraph 0052 of Lee et

al.) as pointed out above, but the external form of the liquid crystal layer disclosed by Lee et al. is not electrically adjustable. The liquid crystal medium flows and takes the shape of its container as obvious to a person skilled in the art. In other words, the external form of the liquid crystal layer is determined by the permanent form of the resinous grating.

Furthermore, even if only for the sake of argument somebody will attempt to implement a free surface into the display of Lee et al., this would lead to undesirable formation of bubbles in the thin space reserved for the liquid crystal medium due to a surface tension, as obvious to a person skilled in the art. The viscoelastic layer disclosed in the independent claim 1 of the present invention is explicitly needed to comprise the free surface in order to electrically deform the viscoelastic layer.

Thus, Lee et al. do not describe all claim limitations of the independent claim 1 of the present invention required by the MPEP Rule 2131 quoted above, therefore, claim 1 is novel and is not anticipated by Lee et al. under 35 USC Section 102(e).

Claim 7 is an independent apparatus claim, which is similar in scope to claim 1 of the present invention. Therefore, arguments made above regarding novelty and non-obviousness of independent claim 1 are fully applied to claim 7 of the present invention. Therefore, claim 7 is not anticipated by Lee et al. under 35 USC Section 102(e) as well.

Claim 2-5 and 8-14 are dependent claims of independent claims 1 or 7, respectively. Since independent claims 1 and 7 are not anticipated by Lee et al. under 35 USC Section

102(e), as shown above, dependent claims 2-5 and 8-14 referred to corresponding novel independent claims 1 and 7 are also novel, and, therefore, they are not anticipated by Lee et al. under 35 USC 102(e).

Furthermore, the Examiner did not present an adequate proof of Lee et al. teaching further unique limitations recited in dependent claims 2-5 and 8-14 of the present invention, which still further reinforces their novelty. Additional considerations can be presented by the Applicant regarding these unique limitations of claims 2-5 and 8-14, if needed.

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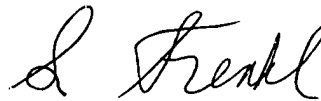
Claim 6 is rejected under 35 U.S.C. 103(a) as being anticipated by Lee et al. as applied to claim 1.

Claim 6 is a dependent claim of independent claim 1. Independent claim 1 is not unpatentable over Lee et al., as shown above. Since the dependent claim 6 narrows the scope of the novel and non-obvious independent claim 1, non-obviousness of claim 1 will compel non-obviousness of claim 6.

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The rejections and objections of the Official Action dated October 31, 2005, having been obviated by amendment or shown to be inapplicable, withdrawal thereof is requested, and the passage of the claims to issue is earnestly solicited.

Respectfully submitted,



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